

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference K 1687 WO	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IB 02/03374	International filing date (day/month/year) 21/08/2002	(Earliest) Priority Date (day/month/year) 28/08/2001
Applicant KENNAMETAL INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 05 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1
☐ None of the figures.

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The invention relates to a cutting insert(10) made of cemented carbide and to the use thereof for recessing or copy-turning, preferably at a high rotating speed. The cutting insert has at least one recess(2) for insertion therein of a cutting body(3) consisting of a cutting material different from cemented carbide to form a firm connection, the cutting body having formed a cutting edge thereon. To allow employment of the cutting insert of a high mechanical strength even with small dimensions in the high-temperature range, it is proposed that the cutting body consist of a ceramic cutting material and have a geometric shape at least a portion of which is congruent with the geometric shape of the recess. Preferably, the ceramic cutting body has the shape of a circular truncated cone.

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B23B27/06		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC 7 B23B		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 015, no. 244 (M-1127), 24 June 1991 (1991-06-24) -& JP 03 079206 A (SHOWA DENKO KK), 4 April 1991 (1991-04-04)	1,9,15, 16
Y	abstract figure 1	2-8, 10-14
X	PATENT ABSTRACTS OF JAPAN vol. 006, no. 089 (M-132), 27 May 1982 (1982-05-27) & JP 57 027602 A (HITACHI LTD), 15 February 1982 (1982-02-15) abstract page 4, right-hand column, line 19 - line 20 figure 1	1,9,12, 13
-/-		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *Z* document member of the same patent family		
Date of the actual completion of the international search 31 October 2002		Date of mailing of the international search report 13/11/2002
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 apo nl, Fax: (+31-70) 340-3016		Authorized officer Breare, D

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 20149 A (MOGALE OBAKENG BIBIAN ;FRIES ROBERT (ZA); SANG JOHNNY LAI (ZA); SI) 13 April 2000 (2000-04-13) page 3, line 13 - line 18 page 4, line 22 - line 25 page 7, line 3 - line 11 page 8, line 8 - line 14 figures 1,5	1,9
Y	US 4 632 606 A (LAGERBERG STIG E V) 30 December 1986 (1986-12-30) column 2, line 26 - line 39 column 5, line 52 - line 54 figures 1-3	2-6, 12-14
Y	SANDVIK COROMANT: "Metalworking Products Turning Tool Catalogue 2000" 2000, SANDVIK COROMANT, HALESOWEN, ENGLAND XP002219093	7,8
A	Catalogue Code C-1000:7-Eng Refer to data for N151.2-800-60 F-P Insert page B22	2-6, 14-16
Y	KENNAMETAL HERTEL: "Turning Tool Catalogue 2000" 2000, KENNAMETAL HERTEL, WEST MIDLANDS, UK XP002219094 Catalogue Reference Number 501.00 page 309	10,11
A	ASHBY MF & JONES DRH: "Engineering Materials An Introduction to their Properties and Applications" 1980, PERGAMON PRESS, OXFORD, ENGLAND XP002219095 ISBN 0-08-026138-8 page 3; table 1.2 page 188, last paragraph -page 189, line 20 page 189; table 20.4	1
A	DE 198 44 858 C (KARL HEINZ ARNOLD GMBH) 16 September 1999 (1999-09-16) column 5, line 48 - line 56 figures 1,3,4	10,11
A	EP 0 552 714 A (ISCAR LTD) 28 July 1993 (1993-07-28) column 4, line 22 - line 39 column 5, line 45 - line 48 figures 2,5,13	5,6,15, 16

	-/--	

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 12680 A (AFOS GERAETE HERSTELLUNGS UND ;HAAS RAINER VON (DE)) 18 March 1999 (1999-03-18) page 11, line 15 -page 12, line 7 figures 1,8-10	10,11
A	US 3 705 447 A (KOLLAR JOHN P) 12 December 1972 (1972-12-12) column 2, line 56 -column 3, line 2 figures 3,6	5,6
A	US 5 733 073 A (ZITZLAFF WOLFGANG ET AL) 31 March 1998 (1998-03-31) column 2, line 60 - line 62 figure 1	2
A	EP 0 431 009 B (KENNAMETAL INC) 12 June 1991 (1991-06-12) cited in the application column 4, line 29 - line 35 column 5, line 18 - line 53 figures 1,3-5	1

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 03079206	A	04-04-1991	JP 2783428 B2	06-08-1998
JP 57027602	A	15-02-1982	NONE	
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US 4632606	A	30-12-1986	SE 445314 B BR 8504645 A DE 3580336 D1 EP 0179033 A2 JP 1642028 C JP 3002604 B JP 61086105 A SE 8404814 A	16-06-1986 15-07-1986 06-12-1990 23-04-1986 18-02-1992 16-01-1991 01-05-1986 27-03-1986
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WO 9912680	A	18-03-1999	DE 19739855 A1 WO 9912680 A1	15-04-1999 18-03-1999
US 3705447	A	12-12-1972	NONE	
US 5733073	A	31-03-1998	DE 4411400 A1 CA 2184730 A1 DE 69509763 D1 DE 69509763 T2 DE 751845 T1 EP 0751845 A1 JP 3283521 B2 JP 9506044 T WO 9526846 A1	16-11-1995 12-10-1995 24-06-1999 27-01-2000 05-06-1997 08-01-1997 20-05-2002 17-06-1997 12-10-1995
EP 0431009	B	12-06-1991	US 4946319 A DE 68915546 D1 DE 68915546 T2 DE 431009 T1 EP 0431009 A1 AT 106028 T CA 1314158 A1 CA 1322877 A2 JP 2774972 B2 JP 3505428 T WO 9001386 A1 US 5100269 A	07-08-1990 30-06-1994 01-09-1994 07-11-1991 12-06-1991 15-06-1994 09-03-1993 12-10-1993 09-07-1998 28-11-1991 22-02-1990 31-03-1992

KEN-26

Deutsches Patent- und Markenamt

München, den 23. Mai 2002

Telefon: (0 89) 21 95 - 3206

Aktenzeichen: 101 42 049.8

Anmelder: Kennametal Inc.

Deutsches Patent- und Markenamt - 80297 München

Patentanwälte
Prinz & Partner GbR
Manzingerweg 7

81241 München

PRINZ & PARTNER
Eing. 04. JUN. 2002
Frist:

Ihr Zeichen: K 1687 DE

Bitte Aktenzeichen und Anmelder bei
allen Eingaben und Zahlungen angeben

Zutreffendes ist angekreuzt ☒ und/oder aus ausgefüllt

Ergebnis einer Druckschriftenermittlung

Auf den Antrag des
wirksam am 28.08.2001 gemäß ☒ § 43 Patentgesetz ☐ § 7 Gebrauchsmustergesetz
sind die auf den beigefügten Anlagen angegebenen öffentlichen Druckschriften ermittelt worden:
Ermittelt wurde in folgenden Patentklassen:

Klasse/Gruppe	Prüfer	Patentabt.
B23B 27/16	Koch	14

Die Recherche im Deutschen Patent- und Markenamt stützt sich auf die Patentliteratur folgender Länder und Organisationen:
Deutschland (DE,DD), Österreich, Schweiz, Frankreich, Großbritannien, USA, Japan (Abstracts),
UDSSR (Abstracts), Europäisches Patentamt, WIPO.

Recherchiert wurde außerdem in folgenden Datenbanken:

Anlagen: 2-fach

Anlagen 1, 2 und 3 zur Mitteilung der ermittelten Druckschriften

Patentabteilung 11
Recherchen-Leitstelle

4 Druckschrift(en) bzw. Ablichtung(en)



Annahmestelle und
Nachbriefkasten
nur
Zweibrückenstraße 12

Hauptgebäude
Zweibrückenstraße 12
Zweibrückenstraße 5-7 (Breiterhof)
Markenabteilungen:
Cincinnatistraße 64
81534 München

Hausadresse (für Fracht)
Deutsches Patent- und Markenamt
Zweibrückenstraße 12
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Bank:
Landeszentralbank München
Kto.Nr.: 700 010 54
BLZ: 700 000 00

P 2251
06.95.
02/01

S-Bahnanschluss im
Münchner Verkehrs- und
Tarifverbund (MVV):



Zweibrückenstr. 12 (Hauptgebäude)
Zweibrückenstr. 5-7 (Breiterhof)
S1 - S8 Haltestelle Isartor

Cincinnatistraße:
S2 Haltestelle Fasangarten
Bus 98 / 99 (ab S-Bahnhof Giesing) Haltestelle Cincinnatistraße

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101 42 049.8

Deutsches Patent- und Markenamt 80297 München

Anlage 1

zur Mitteilung über die ermittelten Druckschriften
gemäß § 43 des Patentgesetzes

Druckschriften:

DE 43 02 645 A1
EP 09 40 215 A1

DE 42 44 316 A1
WO 99 30 860 A1

Deutsches Patent- und Markenamt

80297 München

Für den Anmelder / Antragsteller

Anlage 2

zur Mitteilung der ermittelten Druckschriften

Aktenzeichen

101 42 049.8

Erläuterungen zu den ermittelten Druckschriften:		
1	2	3
Kategorie	Ermittelte Druckschriften/Erläuterungen	Betrifft Anspruch
Y	DE 42 44 316 A1 Figur 7	1-8,15
Y	DE 43 02 645 A1 Figur 1	1-9,15
Y	EP 09 40 215 A1 Figur 3	1-9,12,13,15
Y	WO 99 30 860 A1 Claims	1,12,15

Hinweise zur Mitteilung (Vordruck P 2251)

Eine Gewähr für die Vollständigkeit der Ermittlung wird nicht geleistet (§ 43 Abs. 7 Patentgesetz (PatG) bzw. § 7 Abs. 2 Gebrauchsmustergesetz (GebrMG) i.V.m. § 43 Abs. 7 Satz 1 Patentgesetz).

Die angegebene Patentliteratur kann in den Auslegehallen des Deutschen Patent- und Markenamts, 80331 München, Zweibrückenstraße 12, oder 10969 Berlin, Gitschiner Str. 97 eingesehen werden; deutsche Patentschriften, Auslegeschriften und Offenlegungsschriften auch in den Patentinformationszentren. Ein Verzeichnis über diese Patentinformationszentren kann auf Wunsch vom Deutschen Patent- und Markenamt sowie von einigen Privatfirmen bezogen werden.

Erklärungen zur Anlage 2 (Vordruck P 2253)

Spalte 1: Kategorie

Es bedeutet

- X: Druckschriften, die Neuheit oder das Vorliegen einer erfinderischen Tätigkeit (bei Recherchen nach § 43 PatG) bzw. eines erfinderischen Schritts (bei Recherchen nach § 7 GebrMG) allein in Frage stellen
- Y: Druckschriften, die das Vorliegen einer erfinderischen Tätigkeit (bei Recherchen nach § 43 PatG) bzw. eines erfinderischen Schritts (bei Recherchen nach § 7 GebrMG) zusammen mit anderen Druckschriften in Frage stellen
- A: Allgemein zum Stand der Technik, technologischer Hintergrund
- O: Nicht-schriftliche Offenbarung, z.B. ein in einer nachveröffentlichten Druckschrift abgedruckter Vortrag, der vor dem Anmelde- oder Prioritätstag öffentlich gehalten wurde
- P: Im Prioritätsintervall veröffentlichte Druckschriften
- T: Nachveröffentlichte, nicht kollidierende Druckschriften, die die Theorie der angemeldeten Erfindung betreffen und für ein besseres Verständnis der angemeldeten Erfindung nützlich sein können oder zeigen, dass der angemeldeten Erfindung zugrunde liegende Gedankengänge oder Sachverhalte falsch sein könnten
- E: Ältere Anmeldungen gemäß § 3 Abs. 2 PatG (bei Recherchen nach § 43 PatG); frühere Patent- und Gebrauchsmusteranmeldungen gemäß § 15 GebrMG (bei Recherchen nach § 7 GebrMG)
- D: Druckschriften, die bereits in der Patentanmeldung (bei Recherchen nach § 43) bzw. in der Anmeldung oder dem Gebrauchsmuster (bei Recherchen nach § 7 GebrMG) genannt sind.
- L: Aus besonderen Gründen genannte Druckschriften, z.B. zum Veröffentlichungstag einer Entgegenhaltung oder bei Zweifeln an der Priorität.

Spalte 2: Ermittelte Druckschriften / Erläuterungen

Veröff.: Veröffentlichungstag einer Druckschrift im Prioritätsintervall

nr: Nicht recherchiert, da allgemein bekannter Stand der Technik, oder nicht recherchierbar

=: Druckschriften, die auf dieselbe Ursprungsanmeldung zurückgehen ("Patentfamilien") oder auf die sich Referate oder Abstracts beziehen.

": Nichts ermittelt

Spalte 3: Betroffene Ansprüche

Hier sind die Ansprüche unter Zuordnung zu den in Spalte 2 genannten relevanten Stellen angegeben.

German Patent and Trademark Office		Deutsches Patent- und Markenamt - 80297	
Munich		Munich, May 22, 2002 Telephone: (089) 21	
95 - 3206 Case No.: 101 42 049.8 Applicant: Kennametal Inc.			
Patent Attorneys Prinz & Partner GbR Manzingerweg 7		RECEIVED STAMP PRINZ & PARTNER	
June 4, 2002 81241 Munich		Your Ref.: K 1687 DE	
		Please indicate the file number and the name	
of the applicant in all filings and payments!			
		The applicable items are checked <input checked="" type="checkbox"/> and/or	

completed!

Result of a Publication Search

In response to the application by
effective August 28, 2001, under the terms of ☒ § 43 Patent Act ☐ § 7 Utility Model Act
the publications listed on the attached pages have been identified.
The identifications were made in the following patent classes:

Class/Group	Examiner	Patent Dept.
B23B 27/16	Köch	14

The search in the German Patent and Trademark Office was based on the patent literature of the following countries and organizations:

Germany (DE, DD), Austria, Switzerland, France, Great Britain, USA, Japan (Abstracts), USSR (Abstracts), European Patent Office, WIPO

The search was also conducted in the following data bases:

Attachments: in duplicate

Attachments 1, 2 and 3 on identification of publications

Patent Department 11

Search Management Office

4 Publications or photocopies

[Round seal of the German PTO]

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Building) Zweibrückenstraße 5-7 (Breiterhof) Winzererstraße 47a / Saarstraße 5		Receiving address (for freight shipments): Deutsches Patentamt	
Zweibrückenstraße 12 80331 Munich Telephone (089) 2195-0 Telefax: (089) 2195-2221 http://www.dpma.de		Bank:	
Landeszentralbank München Account No. 700 010 54 (BLZ 700 000 00)			
P 2251 06.95 02/01	Nearest stop on the Munich public transit system (MVG): Zweibrückenstraße 12 (Main Building), Zweibrückenstraße 5-7 (Breiterhof) S1 -		
S8 Isartor	Cincinnatistraße 64 S2 Fasengarten Stop Bus 95 or 99 (from Giesing S-Bahn Station, Cincinnatistraße Stop		

101 42 049.8

German Patent and Trademark Office - 80297 Munich

Attachment 1

to the notification of the result of the publication search
as required by § 43 of the Patent Act

Publications:

DE 43 02 645 A1
EP 09 40 215 A1

DE 42 44 316 A1
WO 99 30 860 A1

Please indicate the applicant/holder + Case No. on all filings. For payments, please indicate intended purpose. See instructions on reverse.

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	Zweibrückenstraße 12 80331 Munich Telephone (089) 2195-0 Telefax: (089) 2195-2221 http://www.dpma.de	Receiving address (for freight shipments): Deutsches Patentamt
	Landeszentralbank München Account No. 700 010 54 (BLZ 700 000 00)	Bank:
A9119	Nearest stop on the Munich public transit system (MVG):	Zweibrückenstraße 12 (Main Building), Zweibrückenstraße 5-7 (Breiterhof) S1 - S8 Isartor
	Cincinnatistraße 64 S2 Fasangarten Stop Bus 95 or 99 (from Giesing S-Bahn Station, Cincinnatistraße Stop	

German Patent and Trademark Office

For the Applicant / Petitioner

Exhibit 2

to Identification of Publications

Case No.

101 42 049.8

Explanations of the publications identified		
1	2	3
Category	Publications identified / Explanations	Relates to Claim(s)
Y Y Y Y	DE 42 44 316 A1 Figure 7 DE 43 02 645 A1 Figure 1 EP 09 40	

215 A1 Figure 3 WO 99 30 860 A1 Claims
15 1-9, 12, 13, 15 1, 12,15

1-8, 15 1-9,

P 2253
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10/00

Instructions Regarding the Notification (Form P 2251)

We cannot guarantee that this list of publications is complete (§ 43, Para. 7, Patent Act, and § 7, Para. 2, Utility Model Act, combined with § 43, Para 7, No. 1, Patent Act).

The patent literature identified is available for consultation in the library of the German Patent and Trademark Office, 80331 Munich, Zweibrückenstraße 12, or 10969 Berlin, Gitschiner Str. 97. Examined and unexamined German patent specifications are also available in the Patent Information Centers. A list of these Patent Information Centers can be ordered from the German Patent and Trademark Office and from a number of private firms.

Explanations Regarding Attachment 2 (Form P 2253)

Column 1:	Category Abbreviations: X: Publications that by themselves are prejudicial to novelty or level of invention Y: Publications that, together with other publications, are prejudicial to the level of invention A: General technological background to the prior art O: Unwritten disclosure, e.g. a presentation printed in a subsequent publication that was given in public prior to the application or priority date P: Publications that appeared in the priority interval T: Subsequently published, non-colliding publications that relate to the theory of the invention applied for, and that can be useful for a better understanding of the invention applied for, or show that the thinking or statements of fact on which the invention is based could be false. E: Older applications in accordance with § 3, Para. 2, Patent Act (for searches in accordance with § 43 Patent Act); older patent applications or older utility models according to § 15 GmbG (for searches in accordance with § 7 GmbG) D: Publications that are already cited in the patent application L: Publications cited for special reasons, e.g. regarding the publication date of a citation or in cases of doubt concerning priority.
Column 2:	Publications Identified / Explanations Veröff: Publication date of a publication during the priority interval nr: Not searched, because generally known prior art, or not searchable =: Publications that come from the same original application ("patent families") or to which reports or abstracts make reference. "-": Not found
Column 3:	Claims Affected: These are the claims associated with the relevant publications listed in Column 2.

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